

A PRIMER OF ART

A Primer of Art. By John Collier. (London: Macmillan and Co., 1882.)

IN this admirable little work Mr. Collier has succeeded in bringing clearly into view the helpful relation in which science may stand to the Arts of Design—sculpture, drawing, and pre-eminently painting. The aim of the primer is to give the outlines of such knowledge of the artistic field of vision, of the visual powers, and of the means of delineation, as may best aid the student to acquire that power of strict imitation of natural objects which is the artist's first qualification.

The notion hitherto prevailing and perhaps somewhat superciliously held to on the part of art—that because the primary functions of science and of art respectively are widely different, therefore no legitimate help can be rendered by one to the other—is practically discredited in every page of Mr. Collier's little work. Throughout, his object is to pioneer the student to an artistic goal; throughout, the means employed have all the security of clear scientific principle. The theory of the Primer is that by knowing with scientific accuracy how some things are, the task of exhibiting artistically how other things appear may be greatly simplified.

After devoting a few charming pages to the latest suppositions concerning the origin of sculpture and drawing—pages illustrated by specimens of prehistoric and even palæolithic art—Mr. Collier quits “debateable ground” for that on which surer scientific light can be shed for the guidance of the student in the practice of art.

And here nothing is overlooked. Boundaries, Light and Shade, Texture, Perspective, Colour, and Contrast are the headings of so many terse and luminous little chapters, through each of which comes some word to the learner from the invisible world where science works, warning him how, unless he gives heed to certain hidden actualities within and without him, he may and probably will go many times wrong before he lights on the best way of rendering the natural objects before him.

Accurate seeing is necessary to ensure accurate delineation. The facts of simple appearance are what the art student needs to lay hold of. Science, whose constant business is with facts of every order, aids him here with suggestions how to discriminate between sight and inference—between that actual aspect of an object which is due to its present relation to the sight of the observer, and that compound mental view of it which is due to the mixed memory of many previous aspects. A perusal of Mr. Collier's pages on the nature of perspective, on the undulatory theory of light, on the action of a lens, on the structure and nervous mechanism of the eye, and on the physiological rationale of the phenomena of colour show how much scientific information can be given without the use of a single technical phrase.

Having learnt to see, the art student must further learn to delineate. Here again, in discussing the painter's media, it is still with the authority of science the teacher speaks. The chapter on “Turbid Media” clears up the difficulty respecting the varying behaviour of pigments as used on different “grounds.” Here, too, as elsewhere, each practical suggestion is accompanied by a scientific reason why the means advocated should be adopted, such

reason being always backed by some absolutely lucid explanation of the nature of the difficulty to be surmounted, or of the effect to be aimed at.

With the subject of landscape painting comes up the question of aerial perspective; and thereupon follow some admirable pages on the constitution of the atmosphere and the refraction of light. In dealing later with certain necessary discrepancies between natural appearances and their painted imitations, Mr. Collier clears out of the way, by a simple scientific consideration, an insidious problem with which the artistic beginner is apt needlessly to perplex himself—namely, how correctly to represent effects of light and shade within the very limited range of luminosity afforded by his materials. The solution lies within the sphere of optics. The eye takes next to no heed of the degree of total illumination; the absolute luminosity of the picture therefore does not signify. All that is needful is to render the relative proportions of light and shade in the object or scene depicted; the effect will then be accurate, since sight adapts itself readily and unconsciously to any scale of illumination that may be visible at one time.

For the rest, this little work of Mr. Collier possesses all the attributes of a first-rate primer. As we have observed, it is terse, clear, simple, instructive, and alluring. While the student receives aid from various departments of knowledge, calculated at once to forward his progress in painting, and to enrich his ideas of the world in which he works, there is nothing attempted to which the finished artist—aware as he is of the part played by imagination and by an incommunicable sense of harmony in the production of the finest art-work—can yet take any exception. Mr. Collier frankly admits the limitations of science with regard to these points, and leaves untouched all vexed questions concerning harmony of line and colour, on the ground that, important though they are, too little is known about them to make discussion profitable.

Yet that there is no real antagonism between accurate knowledge wherever it can be had, and the loftiest artistic imagination, and further, that science may help to free that imagination by giving it mastery over its means of expression, are truths borne witness to throughout the eighty-eight pages of the primer. The scientific reader will recognise in Mr. Collier's successful endeavour to link the rival sisters (Art and Science) in friendly partnership for the better portrayal of that Nature of which both are students, a welcome sign of the times, and an indication of the direction in which we may look for firmer ground than has hitherto been found for fruitful artistic discussion.

L. S. BEVINGTON

OUR BOOK SHELF

A Treatise on Rivers and Canals. By L. F. Vernon-Harcourt, M.A. Vol. I. Text, 352 pp.; Vol. II. Plates, 21 Pl. (Oxford: Clarendon Press, 1882.)

THIS work was intended (see Preface) to present “in a simple and concise form descriptions of the principal and most recent works on rivers and canals, and the principles on which they are based.” It appears to have had its origin in a course of lectures delivered at the School of Military Engineering, Chatham, in 1880, but has been so carefully revised as to be free from the defects of a mere

reprint of a lecture course, and may be fairly said to fulfil well the object proposed in the preface. Great pains have evidently been taken to obtain data of actual examples of important works within the above scope; the series of twenty-one well-executed large plates of these is a most valuable feature of the work. The get-up of the work, being issued from the Clarendon Press, is of course excellent; the number of folds in the plates is an inconvenience (few have less than six, and one has ten folds), which might have been obviated by placing fewer diagrams on each plate. A very useful feature is the addition at the end of each chapter of a short summary of its matter, with many good practical remarks.

The work opens with a chapter on the physics of the subject, followed by one on discharge-measurement, then by one on general principles. Then come seven chapters on various appliances and details, viz., dredgers, piling, foundations, locks, inclines, lifts, fixed and movable weirs, dams, and movable bridges. Then follow one chapter on inland canals, one on great ship canals, one on protection from floods, four on improvement of tidal rivers, and lastly, one on the improvement of the mouths of tideless rivers.

From the great variety of subjects treated of in a compass of 322 pages, the treatment is sometimes unequal. The descriptions of the newest forms of the various appliances are, together with their illustrative plates, very interesting and instructive. But perhaps the most valuable part of the whole work is the last five chapters on the difficult and important subject of the improvement of river mouths; the few guiding principles that can be said to be known about so obscure a question are well brought out from the study of grand examples. The subject of discharge-measurement is not adequately treated: a reference to the recently-published (1881) "Roorkee Hydraulic Experiments" would probably have materially influenced this chapter in giving less importance to current-meters, and more to floats (especially tube-rods), and in the entire rejection of the old Chézy formula, $V = C\sqrt{RS}$, with a constant value of C . The chapter on inland canals is also (perhaps unavoidably) sketchy: thus the description of Indian canals covers only two pages, many of them being simply named.

ALLAN CUNNINGHAM

Galenī Pergamensis de Temperamentis et de Inaquali Intemperie Libri tres, Thoma Linacro Anglo Interprete, 1521. Reproduced in exact Facsimile. With an Introduction by Joseph Frank Payne, M.D. (Cambridge: Macmillan and Bowes.)

THE book before us is one of a series of facsimile reprints of eight books, published in the years 1521–22, by John Siberch, at the first press established at Cambridge; and it would appear, that after the issue of this series, no other works were published there until the year 1585, when a law was passed, limiting the printing of books to London and the Universities.

The revival of classical literature which swept over Europe towards the close of the fifteenth century, effected a complete revolution in the theory of medicine, as well as in philosophy. English scholars of that period were, as a rule, unacquainted with Greek, the few exceptions being men who had studied at the Italian Universities; among these was Thomas Linacre, a Fellow of All Souls, Oxford, who, about the year 1495, visited Italy in the suite of Selling, when the latter was appointed envoy to the Pope, and, after being a fellow student with the sons of Lorenzo de Medici, under Politiano and Chalcondylas, proceeded to his degree of Doctor of Medicine at Padua. On his return to England, he brought with him the reputation of being one of the most elegant and accurate scholars of the day. Shortly afterwards he was appointed tutor to Prince Arthur, and became Court physician on the accession of Henry VIII. to the throne. The physicians of

the day were mostly ecclesiastics, but no restriction was placed on the practice of medicine by persons, however ignorant of its principles; and Linacre, with the view of remedying the abuses that prevailed, devoted his fortune, amassed by the sale of the clerical livings to which he had been presented, to the foundation, in the year 1518, of the Royal College of Physicians, which, under its charter, had power to regulate the practice of medicine in the neighbourhood of London. It is interesting to know, that according to Linacre, a physician should be "a grave and learned person, well read in Galen, respecting but not bowing down to the prestige of the Universities; claiming for his own science a dignity apart from, but not conflicting with that of theology; looking upon surgeons and apothecaries with charity, and not without a sense of his own superiority."

The Galenical theories of humours and temperaments formed the groundwork on which the Greeks based their practice of medicine, and Linacre to bring these theories within the reach of all students of medicine translated into Latin six of Galen's works, among which were the "De Temperamentis" and "De Inaquali Intemperie," now before us, thus helping to replace the mysticism and empiricism of the Arabians by the accumulated observations recorded by Hippocrates and Galen. In these works it is assumed that to the four humours, blood, pituite, yellow bile, and black bile, there are the corresponding properties, moist-heat, moist-cold, dry-heat, and dry-cold; and that between health and disease there are four temperaments, characterised by an excess of either one or two of the cardinal qualities, heat, cold, moisture, and dryness. These were the only external influences acting on the body the ancients could recognise, as they were ignorant of the chemical processes of respiration, of the constitution of the atmosphere, and of electricity, of which we now take account. These theories are elaborated, and further, it is indicated that medicines may be classified according to their heating, drying, cooling, or moistening qualities, and should be administered so as to temper the errors of the humours in disease; and though the work has ceased to have a practical value for physicians, it yet remains of interest to the student of humoral pathology, and of the philosophy of the middle ages.

Students are indebted to the enterprise of Messrs. Macmillan and Bowes for the reprint of this scarce work, which was the first book containing Greek characters printed in England, and we are glad to learn that the same publishers propose shortly to issue the remainder of the series. The book is edited by Dr. J. F. Payne, and is prefaced by a portrait and an admirable life of Linacre.

Rhopalocera Malayana: a Description of the Butterflies of the Malay Peninsula. By W. L. Distant. (London: W. L. Distant, care of West, Newman and Co., 54, Hatton Garden, E.C.)

WE have received the first part of this handsome work, in which it is proposed to describe and figure all the species of butterflies which inhabit the Malay Peninsula and the islands of Penang and Singapore. Forty-four coloured figures of butterflies are given in this part, occupying four plates of large quarto size: and they are most admirably executed in chromo-lithography. Some of the figures, indeed, are hardly to be distinguished from good hand-colouring. The descriptions are full and careful, and much judgment is shown in using, as far as possible, old and well-established names, and in rejecting needless sub-divisions of the genera. It is expected that the work will be completed in six or seven parts, forming a handsome quarto volume; and we trust that the author may obtain numerous subscribers in our wealthy colonies of Singapore and Penang, as well as at home, to encourage him to complete the work in the same full and careful manner as he has commenced it.

As most of the butterflies of the larger Malay Islands